

DRAFT INTERIM

Genesee County Health Department (GCHD)

Timeline of Flint Water Events

April 25, 2014, the drinking water source for the City of Flint switched from Detroit Water Authority (Lake Huron) to the Flint River as a temporary water supply until the Karegnondi Water Authority (KWA), Lake Huron pipeline becomes available. KWA is projected to go on line mid-2016.

The time frame of the switch correlates with many water quality and public health concerns. Some of the health concerns have been confirmed and others are suspected.

- Odor, turbidity and brown water
- Positive E.coli and boil water advisories
- Water main breaks
- Trihalomethanes exceedance of EPA standards
- Skin irritations (rashes)
- Increase Legionnaires' disease
- Elevated lead levels

1. 06/24/2014 (Bug Fuzz Meeting) GCHD quarterly meeting with local hospitals: McLaren, Hurley and Genesys – At the meeting there was discussion regarding a Legionella case that had been previously hospitalized at McLaren. It was noted that there was not an increase in Legionella cases from previous years.
2. 08/20/2014 Communicable Disease Investigation Response Team (CDIRT) GCHD's monthly communicable disease staff meeting – There was a discussion with McLaren regarding the possibility of hospital acquired Legionella. Discussion of multiple potential sources and monitoring also occurred at this meeting because there was a noted increase in Legionella cases observed from previous years.
3. 9/4/2014 McLaren aggressive research identifies locations of legionella patients in the same hospital tower, but different floors. GCHD works with McLaren to identify common associations of legionella cases. McLaren hires an

environmental consultant to sample and assess risks. The possibility of cooling towers is discussed as a potential of exposure.

4. 9/05/2014 Environmental testing for Legionella at McLaren. GCHD requested and received approval to attend McLaren next administrative meeting regarding Legionella.
5. 9/08/2014 GCHD begins mapping cases of Legionella throughout Genesee County to look for common associations and trends.
6. 9/15/2014 GCHD sends Legionella case list to Michigan Department of Health and Human Services (MDHHS).
7. 9/15/14 City of Flint issues boil water advisory due to positive e-coli, MLive (Flint Journal). GCHD's environmental health sanitarian staff visit Flint food service establishments to ensure safe procedures for serving water.
8. 9/26/14 McLaren receives Legionella test results from consultant.
9. 10/4/14 McLaren hyper chlorinates their water system. No new suspected hospital acquired Legionella infections reported by McLaren (until May 2015).
10. 10/6/2014 Bug Fuzz meeting discussed the investigation of different factors as potential Legionella source. Conversation with hospital infectious disease staff regarding concerns about Flint water. GCHD does not have evidence to link Flint water to Legionella.
11. 10/15/14 At the Communicable Disease Investigation Response Team (CDIRT) meeting Legionella was discussed. No suspected additional hospital acquired Legionella cases at McLaren after the hyper chlorinated treatment. Additional Legionella cases were identified. GCHD contacted the state regarding GCHD's extended Legionnaires' disease questionnaire.
12. 10/ 16/14 GCHD spoke with Michigan Department Environmental Quality (MDEQ) regarding the increased cases of Legionella and possible correlation with the Flint water supply after switching to Flint River.

13. 10/16/14 MDEQ informs GCHD that Legionella does not violate the Safe Drinking Water Act and Flint water meets all requirements. MDEQ declined to meet to participate in conference call scheduled for 10/17/14.
14. 10/17/14 GCHD has conference call with Flint Department Public Works (DPW). GCHD developed a comprehensive Legionella survey. Survey outcome shared with MDHHS and combined with CDC survey and was implemented for all incoming cases.
15. 10/22/14 GCHD discussed Legionella information with MDHHS and requested help from MDEQ. GCHD met with Council of State and Territorial Epidemiologist (CSTE) to request unbiased data review when received from City. GCHD did not receive the documents from the City of Flint.
16. 10/30/14 GCHD meets at McLaren with hospital administration and City of Flint DPW to discuss possible trends of Legionnaires' disease. GCHD staff request information from City of Flint DPW again and only receives lab results for heterotrophic plate count (October document only). McLaren has performed hyper chlorination of internal water system.
17. 11/12/2014 GCHD meets internally to discuss results and prevention plan (phone calls are made to request data from City of Flint DPW about heterotrophic plate counts, no response from city). GCHD began discussions to independently test Flint water for Legionella and heterotrophic bacteria.
18. 11/26/2014 GCHD emails written request to City of Flint DPW for data regarding water treatment and distribution. There was no response.
19. 11/23 -12/7/ 2014 GCHD contacted state and national experts regarding water systems. GCHD began discussions about independent testing in areas with elevated heterotrophic plate counts. GCHD called MDHHS for more information about environmental testing. GCHD also requested assistance from MDHHS to obtain state municipal water expertise
20. 12/1/14 GCHD developing plan for Legionella testing in areas with high heterotrophic plate counts. GCHD waiting on data requested from City of Flint DPW in order to determine what kind of testing should be done.

21. 12/4/14 GCHD's environmental health staff reached out to Legionella and municipal water supply experts. Each conversation raises concerns about the condition of the overall water system. Heterotrophic bacteria including Legionella, lead, copper, other metals, and other contaminants are discussed.
22. 12/16/14 GCHD talks with City of Flint water plant lab supervisor regarding how to obtain information discussed at meeting on 10/17/14. GCHD was told by City of Flint that the information will be provided.
23. 1/13/15-GCHD meets with City with regards to water safety - More on testing and requesting data from City of Flint DPW.
24. 1/20/15-GCHD's meeting about testing water for Legionella and other potentially harmful bacteria in the water- More research needs to be done. GCHD needs more data. FOIA request discussed. GCHD speaks with MDEQ. MDEQ refuses to meet.
25. 1/21/15- GCHD attended water presentation at the City of Flint dome. MDEQ stated there was no violation of Safe Drinking Water Act and Flint water is in compliance. MDEQ would not indicate that water was safe when asked by community members and residents. GCHD speaks briefly with MDEQ after presentation and agrees to have a phone conversation on 1/22/15.
26. 1/22/15 GCHD speaks to MDEQ and was told no violations of Safe Drinking Water Act and to do our investigation with MDHHS.
27. 1/22/15 (Bug Fuzz Meeting) Conversation regarding prevention plan for Legionella with upcoming warm weather. MDHHS's Regional Epidemiologist offers testing of clinical samples. Many complaints from residents about lack of communication regarding water related issues and GCHD not being able to get information from Flint DPW or MDEQ.
28. 1/23/15 GCHD request from MDHHS for a Legionella conversation. Regional Epidemiologist not copied in response from MDHHS.
29. 1/26/15 and 1/27/15 CDIRT meets to discuss call with MDHHS.
30. 1/26/15 GCHD emails City of Flint requesting information prior to FOIA.

31. 1/27/15 GCHD submits a FOIA request to the City of Flint regarding the lack of cooperation from the MDEQ and City of Flint officials to gain information to assess risks of the water system, prompted, 2014.
32. 2/4/15 GCHD responds to MDHHS regarding conference call issues.
33. 2/9/15 GCHD responds to public concerns and develops hard water rash fact sheets.
34. 2/10/15 GCHD requests phone conference with City of Flint DPW, Dr. Janet Stout and Dr. Joan Rose. Dr. Rose and Dr. Stout are national Legionella experts. The City of Flint DPW agrees to provide samples for heterotrophic plate counts, dead-end pipes, laboratory test results, sampling locations, and locations of water main breaks.
35. 2/11/15 MDHHS sends clinical guidance for Legionella follow-up calls with MDHHS staff continue.
36. 2/23/15 GCHD finalizes Legionella questionnaire in preparation for warmer weather.
37. 3/10 /15 GCHD resubmits FOIA to City of Flint and copies MDEQ with correspondence.
38. 3/11/15 GCHD reaches out to local university partners to initiate a Community Based Participatory Research Project regarding Flint water and water infrastructure. GCHD staff discusses potential independent environmental testing.
39. 3/13 - 3/17/15 GCHD exchanges emails with MDEQ regarding their lack of cooperation. No response from MDEQ after GCHD requests a meeting.
40. 3/17/15 GCHD receives FOIA response package from City of Flint in mail with hundreds of pages of irrelevant documents.
41. 3/19/15 GCHD seeks assistance from EPA for municipal water information. GCHD communications officials at MDHHS were CDC to help with Legionella.
42. 3/30/15 GCHD meets with City of Flint attorney to discuss lack of response to the FOIA.

43. 3/27/15 GCHD speaks with CDC at Michigan Epidemiologist Conference and requests a telephone call regarding Flint water. A telephone conversation follows.
44. 4/7/15 Email from MDHHS regarding Legionella investigation. GCHD requests assistance to obtain MDEQ cooperation the email references GCHD's outreach to CDC. Permission is requested from MDHHS to discuss Legionella cases and other water issues with the CDC. A conference call is set up with CDC, MDHHS, and GCHD staff.
45. 4/9/15 MDHHS requests does follow up regarding joint activities and directs GCHD staff to make inquiries regarding water to MDEQ.
46. 4/15/15 GCHD emails MDHHS with CDC contact letter. Shared the experts GCHD reached out to regarding concerns related to water system.
47. 4/20/15 GCHD sets up call with CDC, EPA, and MDHHS. GCHD discusses Community Based Participatory Based Research Project.
48. 4/23/15 GCHD follows up with CDC expressing appreciation. Concerns have been shared and GCHD's desire to continue its communications with the CDC as new issues arise.
49. 4/27/15 CDC emails GCHD and MDHHS' staff regarding the size of the outbreak. GCHD requests for moving up the date of our conference call.
50. 4/29/15 GCHD forwards information to CDC for conference call.
51. 4/30/15 GCHD has follow up call with CDC. CDC suggests updated guidance regarding clinical specimen collection.
52. 4/30/15 GCHD meets with City of Flint attorney again to obtain Information from FOIA.
53. 5/1/15 GCHD staff forwards additional clinical information to CDC.
54. 5/1/15 CDC sends GCHD resource information and environmental sampling protocols.

55. 5/4/15 MDHHS sends updated CDC clinical specimen collection guidance to GCHD.
56. 5/7/15 (Bug Fuzz Meeting) provides updates regarding Legionella. Concerns regarding water system discussed.
57. 5/15/15 GCHD in the process of developing plans with the CDC to properly collect and process clinical and environmental specimens. CDC offers to send a team to GCHD to help with collection and comparison of environmental and clinical samples.
58. 6/4/15 MDHHS emails: GCHD, CDC, and EPA their executive summary which prematurely claims the outbreak over.
59. 6/5/15 GCHD emails disagreement with MDHHS that the Legionella outbreak was over and continues to work with CDC and plans a conference call.
60. 6/8/15 MDHHS emails that any further communications between GCHD and CDC will need MDHHS approval and must be in the form of an EPI-AID which did not occur.
61. 6/30/15 GCHD staff continues to work with the local hospital systems regarding hospital acquired Legionella infections. GCHD instruct McLaren that more aggressive intervention is necessary and connects McLaren with Special Pathogens laboratory Dr. Janet Stout.
62. 9/15/15-GCHD meets with Marc Edwards at Genesee County Health Department.
63. 9/29/2015 Public Health Advisory on lead and the health effects of lead issued by Genesee County Health Department
64. 9/29/15 GCHD begins working with MDHHS Toxicology Division to develop lead related fact sheets.

65. 10/1/15 GCHD Declares Public Health Emergency and advises no consumption of Flint water.
66. 10/2/15 GCHD collaboration with Flint Community Schools and MDEQ to sample schools for lead levels in water. GCHD staff collects water at Flint schools. MDEQ picks up samples at GCHD and indicates they will be expedited with the results available 10/5/15.
67. 10/2/15 Genesee County Building and Grounds sample the county jail for lead and submits to MDEQ lab.
68. 10/5-10/8 /2015 GCHD requests lead water results for Flint Community Schools and county jail. MDEQ refuses to release the results.
69. 10/8/15 MDEQ releases results for Flint Community Schools and county jail immediately after Governor's press conference, explaining the water will be switched back to Lake Huron. Elevated lead levels were found at multiple schools and the schools were not informed until after the press conference.
70. 10/3/15 GCHD conducts mass distribution of water filters to at risk populations.
71. 10/16/15 GCHD meets with MDEQ staff. MDEQ staff explain they would have been fired had they released the lead water results.
72. 10/31/15 MDEQ conducts follow up water sampling at Freeman Elementary and refuses to release the water results, again.
73. 11/3/15 GCHD submits FOIA to MDEQ for school water results and MDEQ extends FOIA.
74. 11/9/15 GCHD staff visits all Flint Community Schools to ensure that water was not being consumed.
75. 11/20/15 MDHHS attempts to restrict GCHD's CLPPP (residential lead abatement) grant. The grant focuses on first time pregnant women and does not assist with known children with elevated lead in their blood.
76. 11/30/15 GCHD initiates media release regarding Legionella information shared with EPA resulting in communication with the CDC.

77. 12/1/15 MDHHS request joint collaboration on media release and joint communication regarding Legionella. GCHD does not receive media release from MDHHS for review. Joint communication did not occur.
78. 12/10/15 GCHD requests call with CDC, MDHHS, EPA and ATSDRD. Individual conversation with CDC, STADR and NCEH to develop education materials for GCHD Train-the-Trainer community outreach materials.
79. 12/10/15 Call with CDC, ATSDR, NCEH, EPA, MDHHS and CDC. Discussed ASHRAE 188 Education and Outreach and creation of a Health Risk Assessment team re: Flint Water.
80. 12/18/15 Conference call with Marc Edwards regarding Legionella investigation.
81. 1/4/16 GCHD requests December 10 participants help with data review regarding Legionella and ongoing health risk assessment of water system. GCHD works in partnership with Michigan Public Health Training Center and Dr. Janet Stout to present a webinar regarding Legionella prevention.
82. 1/4/16 GCHD has follow-up conversation regarding 12/10/15 call. Meeting scheduled for the team to begin work.
83. 1/6/16 GCHD publishes lead poison prevention plan with county. 10/15-Present on going conversation with EPA regarding Legionella investigation.